~~TOP SECRET~~

NPIC/R-567/64

July 1964

25X1

Copy

15 Pages

PHOTOGRAPHIC INTERPRETATION REPORT

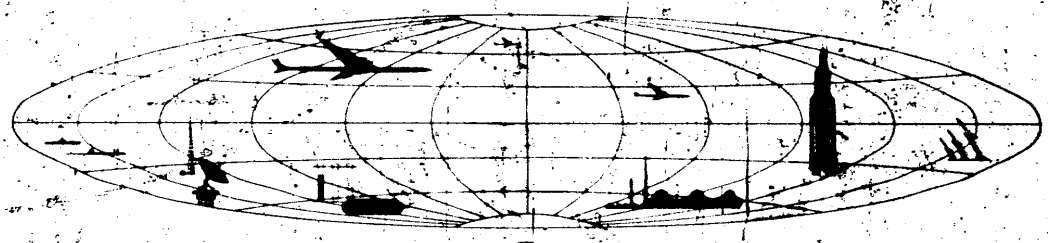
POSSIBLE SOLID PROPELLANT TEST FACILITIES NEAR LENINGRAD, USSR

DECLASSIFICATION REVIEW BY NIMA / DoD

CIA DIA

25X1

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER



~~TOP SECRET~~

TOP SECRET

25X1
25X1
25X1

PHOTOGRAPHIC INTERPRETATION REPORT

POSSIBLE SOLID PROPELLANT TEST FACILITIES NEAR LENINGRAD, USSR

NPIC/R-567/64
July 1964

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

25X1
25X1

TOP SECRET

TOP SECRET

25X1
25X1
25X1

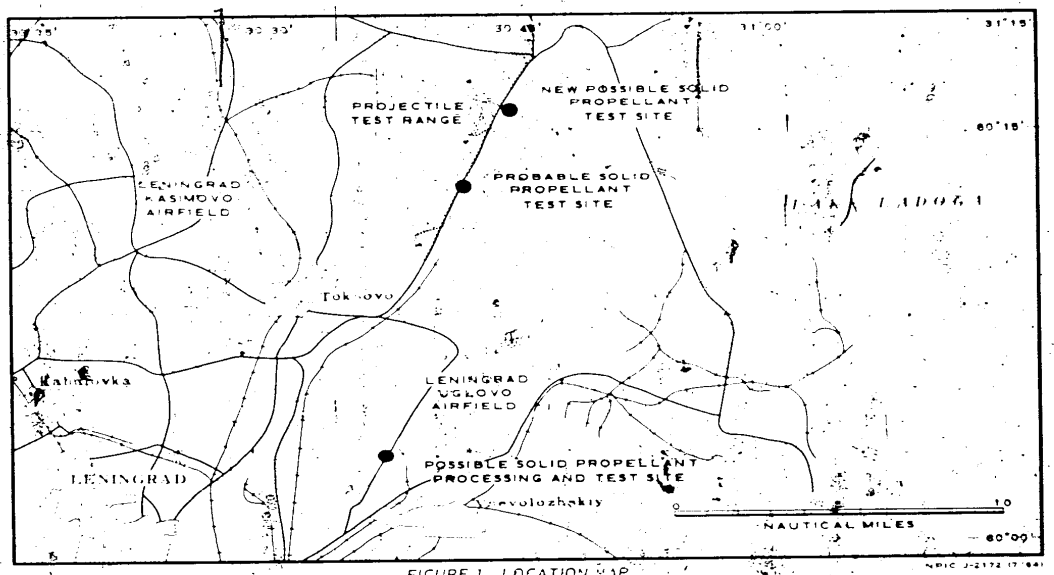


FIGURE 1. LOCATION MAP.

25X1
25X1

TOP SECRET

NPIC/R-567/64

SUMMARY

Four installations possibly associated with solid propellant testing are located northeast of Leningrad, USSR. Three of the installations appear to be solid propellant test facilities, and the fourth is a projectile test range. All four facilities have been built since World War II.

INTRODUCTION

A number of artillery or missile testing facilities are located in a wooded and boggy wasteland northeast of Leningrad, USSR (Figure 1). Four of these installations, all of which appear to have functions related to solid propellant testing, are described in this report. Three of these appear to be solid propellant test facilities, and the fourth is a projectile test range which is 10 nautical miles (nm) in length. Two of the test facilities and the projectile test range are situated northeast of Toksovo. The projectile test range was built sometime between 1943 and 1961; the two test facilities were also built after 1943, the one farthest from Toksovo having made its appearance since 1962. The fourth installation is located north-northwest of Vsevolozhskiy (Figure 1) and was built sometime after 1944.

Three other facilities situated in the same general area northeast of Leningrad are not discussed here because they have been described briefly in an earlier report. 1/ They are (1) a moving target range located at 60-22N 30-17E, (2) a plant using or processing explosive materials at 60-06N 30-29E, and (3) an explosives storage area at 60-06N 30-27E.

The USSR is reported to be using primarily colloidal (double base) solid propellants which are closely related to artillery propellants. 2/ Consequently, the four installations considered in this report could be testing either rocket or artillery propellants. They may be related to the Leningrad Munitions Loading and Storage Plant Krasnoye Znamets and the Leningrad Chemical Plant Okhtenskiy 25X1 25X1

NEW POSSIBLE SOLID PROPELLANT TEST SITE

Of the four installations to be discussed in this report, the one farthest to the northeast of Toksovo (Figure 1) is identified as a possible solid propellant test site and is relatively new. It was not present in 25X1 was observed under construction in and appeared complete in 25X1 therefore, it is designated as the "new" possible solid propellant test site in this report to distinguish it from the other three installations. Situated at 60-15N - 30-44E, the site is 23 nm northeast of Leningrad and 9 nm northeast of Toksovo.

This new facility consists of a double-fenced area containing five revetted probable horizontal test positions, a control structure, and various support structures (Figures 2 and 3). The probable test positions consist of five U-shaped revetments, each of which encloses an area measuring about 130 by 100 feet. In each of the enclosed areas are five or six small objects arranged in a symmetrical pattern (inset, Figure 3). These objects are possibly related to test operations with functions such as tie-down, remote control, and observation. Outside and to

the rear of each revetment is a rectangular object abutting the rear of the revetment wall, and a smaller object is situated near the rear of the rectangular object.

Probable pipe/cable scars lead from the probable test revetments to a probable control structure which is centrally located to their rear. Snow melt along the scars and on the backs of the revetments indicates that the scars may contain steam lines. The open ends of the revetments front on a loop road, and the woods are cleared back in that direction at least 350 feet from the revetments.

The probable control structure is approximately 400 feet from the nearest revetment. The side of this structure facing the revetments

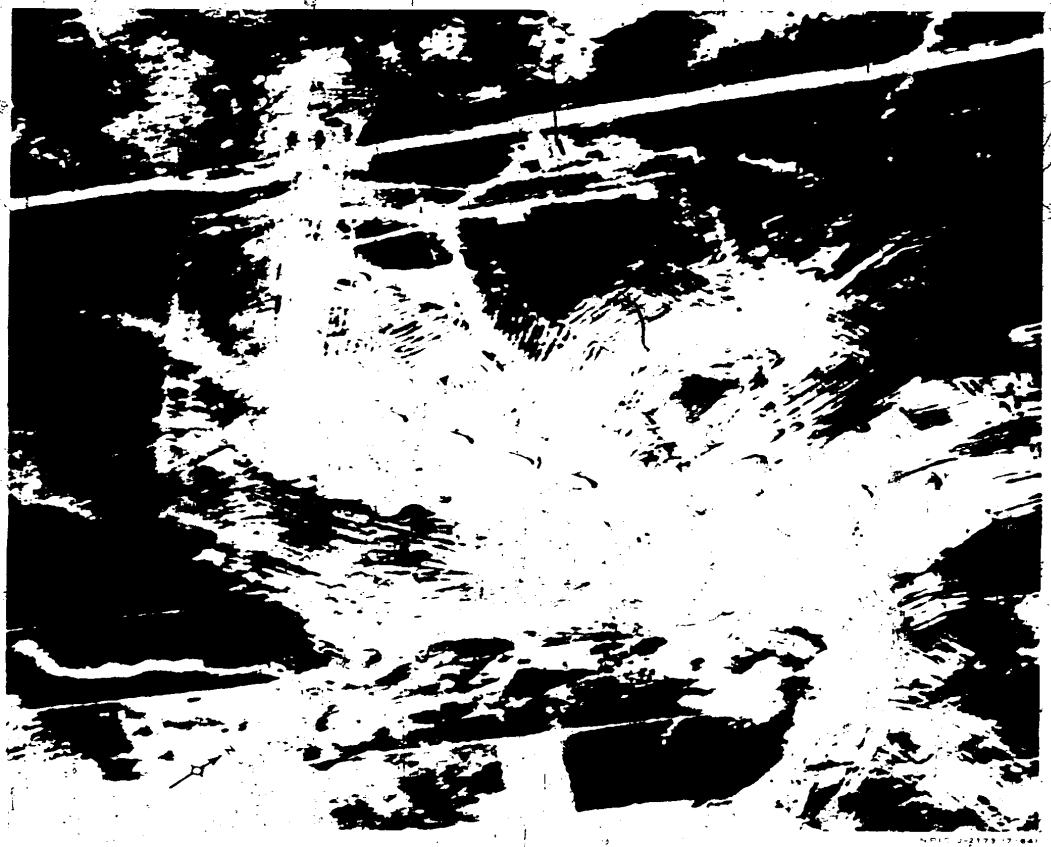


FIGURE 2. NEW POSSIBLE SOLID PROPELLANT TEST SITE

is protected by a blast wall, and the ends of the structure are mounded with earth.

Two other U-shaped revetments are observed at this site, one at each end of the row of five probable test revetments. The one at the western end contains a shop-type building. The other has a ramp leading to its top, and its vertical walls suggest the existence of a possible structure beneath the revetment. Four of the five probable test points can be seen from its top.

Other facilities at this site include an earth-mounded storage building in the woods to the rear of the probable test revetments, two sheds, and a tall lattice tower. A steam plant and two other buildings are just outside the west fence.

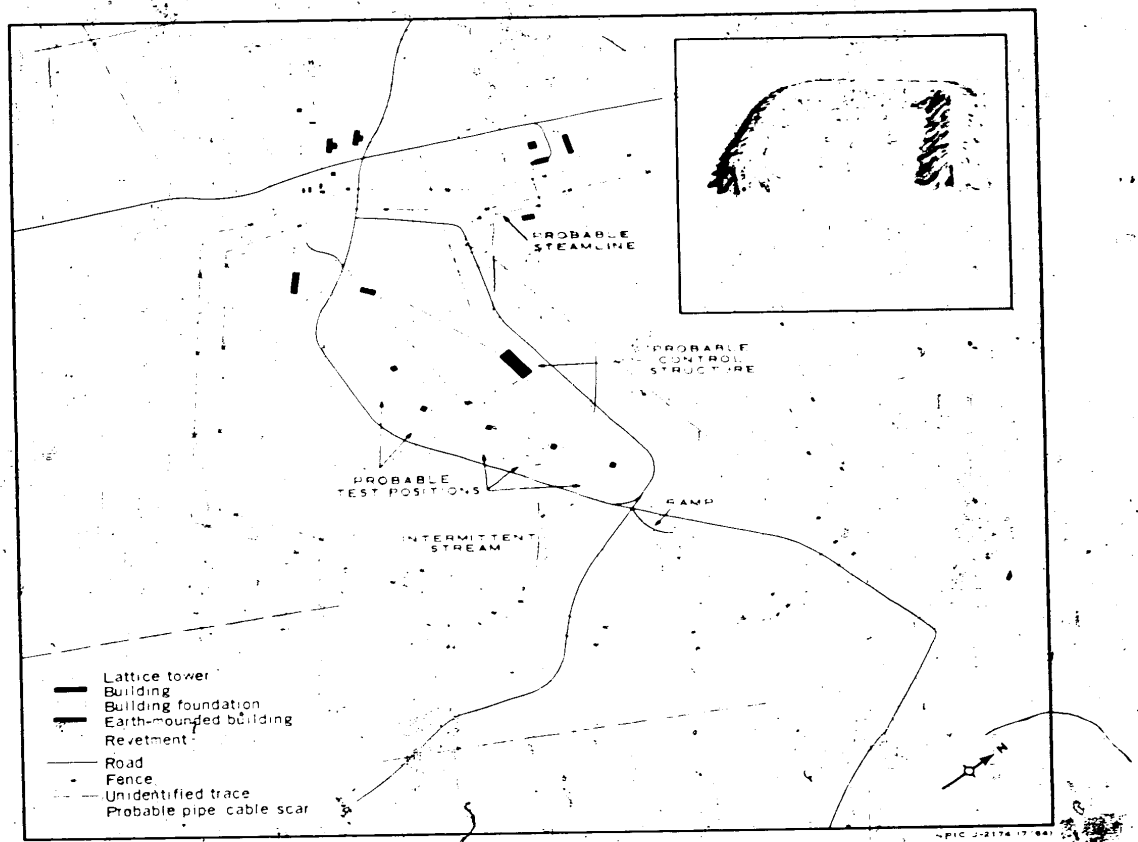


FIGURE 3. NEW POSSIBLE SOLID PROPELLANT TEST SITE AND INSET DRAWING OF ONE OF THE FIVE SIMILAR PROBABLE HORIZONTAL TEST POSITIONS. (Drawings are from unrectified photography and are not to scale.)

PROBABLE SOLID PROPELLANT TEST SITE

A probable solid propellant test site is situated at 60-12N 30-42E, 7 nm northeast of Toksovo and 20 nm northeast of Leningrad, USSR (Figure 1). It was not present in 1943 but was probably present in [redacted] The installation is secured by a double fence and guard towers (Figures 4 and 5). Within the fenced area are four firing positions and one possible firing position which appear to be small notches cut in low cliffs, and there is also a revetted possible burn area. Two blast marks and a possible burn scar were visible in the snow on [redacted] and two blast marks and one probable blast mark were visible on [redacted] (Figure 5). The blast marks are estimated to range between 150 and 330 feet in length. Their lack of symmetry suggests multiple firings at each point; however, the marks are directional enough to indicate test firing rather than burning. The extreme simplicity of the site and the indicated horizontal firing suggest the testing of solid propellants.

Other facilities at this site include an earth-mounded possible control structure, three other earth-mounded structures, one revetment, and at least five possible observation points. Of the latter, at least three are small structures above ground and two are dug in. A tall crescent-shaped structure consisting of six uprights with a horizontal cap on top of the uprights occupies an isolated position on the western side of the site. The function of this structure is unknown, and it is probably extraneous to the site. Service roads extend to each of the test points, and the installation is served by a road.

POSSIBLE SOLID PROPELLANT PROCESSING AND TEST SITE

A possible solid propellant processing and test site is situated at 60-03N 30-36E, 3 nm west-southwest of the Leningrad/Uglovo Airfield, 3 nm north-northwest of Vsevolozhskiy, and 10 nm northeast of Leningrad (Figure 1). A probable support area is situated immediately south of the site (Figure 6).

The site is secured by a double fence with guard towers and is served by a branch rail line 8 nm in length which was built for the site (Figure 7). The area within the fence is divided into a processing section, a probable test section, and a materials-handling section. Most of the operational facilities of these three sections are either revetted by banks of earth or are sited in cuts that have been dug into three sides of a hill which constitutes the principal terrain feature of the site. A road which serves the operational facilities circles the hill.

Several of the buildings and the blast walls in the materials-handling section as well as the probable support area were present in 1943. The processing and probable test sections and the branch rail line were built between 1944 and 1961. One or more of the probable test cells were possibly added between 1961 and 1963.

The processing section contains eight revetted shop-type buildings including four high one-story or multistory buildings, and four unrevetted high shop-type buildings. A low building is connected to one of the unrevetted shop-type buildings by a straight ground scar.

ILLEGIB

Next 1 Page(s) In Document Denied

The test section consists of a revetted possible control building (U-shaped) and two pairs of U-shaped revetments. Two of the revetments (inset A, Figure 7) are each occupied by a small shed and by a small, multisectioned structure with several different roof levels. These multisectioned structures are probably test cells, and each is connected to the probable control building by a pipe cable. The structures in the other two revetments (inset B, Figure 7) are also multisectioned but are larger than the structures in the other pair of revetments. These structures (inset B) are probably horizontal test cells. Distinguishing features of both of these structures are flaring "horn-shaped" sections at the ends facing out of the U-shaped revetments. The height of the flared ends is estimated to be approximately 20 feet. Two pipe galleries or low passageways connect each probable test cell with a building to its rear. One of these buildings either is on a terrace or is protected by a revetment. The other revetment is terraced to the rear of the probable test cell, and a small structure is located on the terrace. The horn-shaped ends of the probable test cells are about 200 feet from a clump of woods on the far side of the perimeter road. Since these woods have not been cleared, the size of the propellant grains which could be tested would be limited by the distance to the woods. No flushing facilities are visible.

The materials-handling section (Figure 7) contains a rail-to-road transfer facility and open storage of explosive materials. Blast walls protect the rail-to-road transfer portion of this section on the southern and eastern sides. Two rail-mounted bridge cranes are present which would indicate that heavy items are handled, including shipping crates which are visible in this area. At the northwestern end of the section is a U-shaped revetment used for open storage; a movable crane is located within this revetment. Protected from the rail-to-road transfer portion of the section is an area at the southeastern end of the section which is revetted on two sides. This revetted area contains seven buildings including two that are separately revetted. The rail facilities include several revetted or dispersed sidings; three rail cars can be seen on one of these sidings on photography of [redacted] (Figure 6). North of the materials-handling section and outside the security fence is an east-west line of 12 pads or revetments (not shown) which are possible artillery firing points. They are not in line with the projectile testing range and do not appear active.

25X1

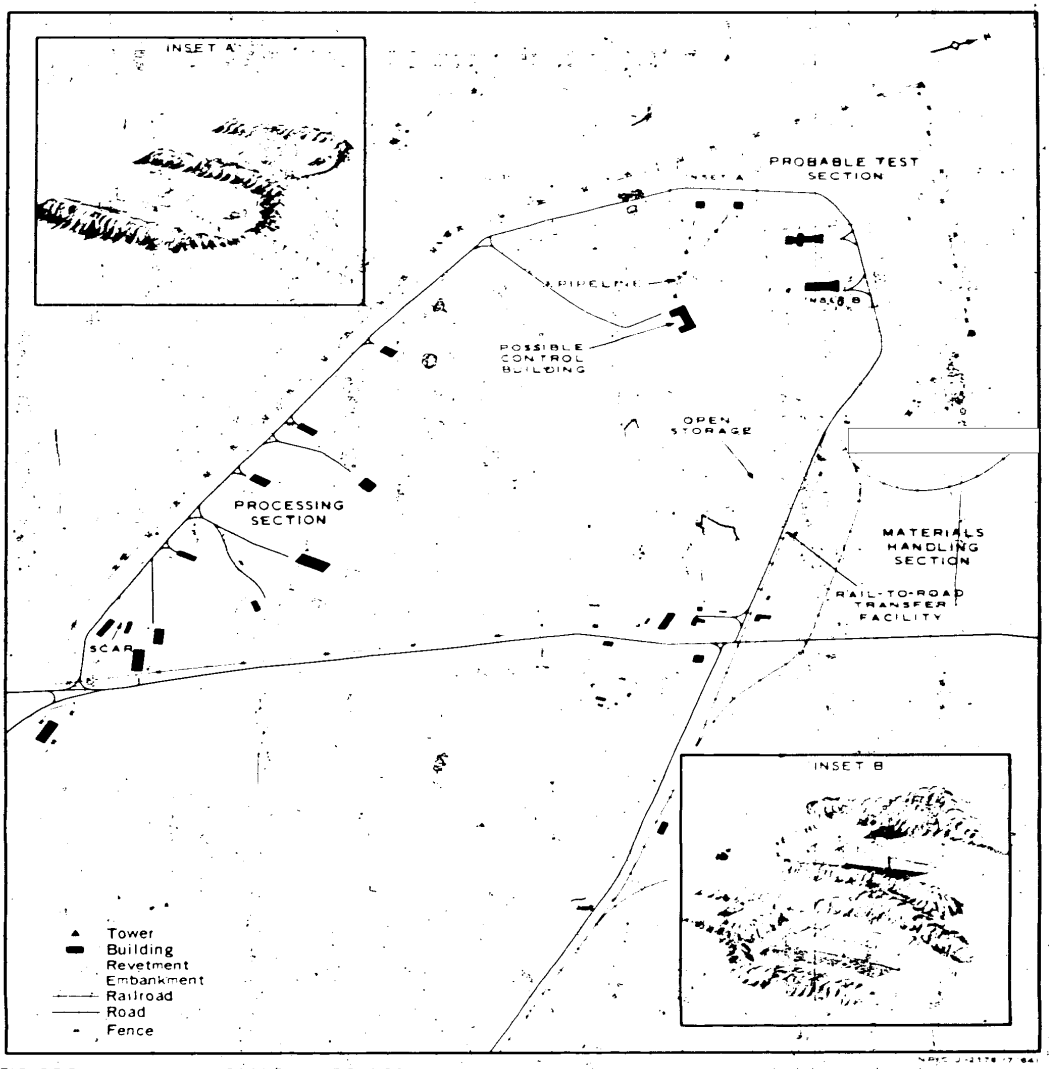
PROJECTILE TEST RANGE

The projectile test range extends east-northeast from a point (60-10N, 30-38E) 3 nm northeast of Toksovo and 15 nm northeast of Leningrad to a point (60-19N, 30-45E), just north of Vuoloyarvi (Figures 1 and 8). It is approximately 10 nm long and 5,000 feet wide. The woods are cleared in a straight line on the western side and in an even sawtooth configuration on the eastern side. Lattice towers an estimated 3,500 feet apart have been built at the outer points of the teeth (away from the cleared strip). These towers have a field of view of at least 130 degrees. They are probably optical tracking towers for determining the flight characteristics of projectiles.

25X1

25X1
25X1
25X1

NPIC R-567 64



25X1

FIGURE 7. POSSIBLE SOLID PROPELLANT PROCESSING AND TEST SITE. Drawing is from unrectified photography and is not to scale.

25X1
25X1

25X1

TOP SECRET

25X1
25X1
25X1

NPIC/R-567/64

REFERENCES

PHOTOGRAPHY

25X1

MAPS OR CHARTS

ACIC, U.S. Air Target Chart, Series 200, Sheet 0103-25HL, 3d ed, Jan 62, scale 1:200,000 (SECRET)

ACIC, U.S. Air Target Mosaic, Series 50, Sheet 0103-25 10MA, 1st ed, Dec 60, scale 1:50,000 (SECRET)

ACIC, U.S. Air Target Mosaic, Series 50, Sheet 0103-25 14MA, 1st ed, Dec 60, scale 1:50,000 (SECRET)

DOCUMENTS

1. ACSI, PIM 1-64, 6 Jan 64 (TOP SECRET [redacted]) 25X1
2. USAMC, FSTC 351-4002, *Non-Soviet Explosive and Propellant Research*, Sep 63 (SECRET)

REQUIREMENT

USIB-64

NPIC PROJECT

N-535-64

- 13 -

25X1

TOP SECRET

25X1